

Paternal Incarceration and Early Juvenile Delinquency

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ABSTRACT

Rising rates of incarceration since the 1970s, combined with high rates of fatherhood among men in jails and prisons, have led to an unprecedented number of children – more than 1.7 million in 2007 – affected by paternal imprisonment. The growing literature documenting challenges faced by families following a fathers' incarceration raises grave concerns and suggests that the growing rates of incarceration among fathers might have the unintended consequence of increasing delinquency and criminality among their children. This paper uses data from the Fragile Families and Child Wellbeing Study to assess patterns of delinquency among school-aged children, and particularly, differences in delinquency by fathers' incarceration status. A series of item-response models suggest nontrivial rates of antisocial behavior among children in the analysis sample, including higher rates of delinquency, and a greater variety of delinquent activities, among children with histories of paternal incarceration. While estimated relationships are preliminary and are not intended to represent causal effects, the increased delinquency among children of incarcerated fathers, particularly before the commonly-acknowledged “peak offending years” of adolescence, raises serious concerns.

Middle childhood is an important period in children's intellectual and social development. Social skills develop rapidly during this period, as children become more adept at self-regulation, and are exposed to greater contact with society outside their family (Raffaelli, Crockett and Shen 2005). In addition, child behavior problems at this age are predictive of a broad array of outcomes later in life (Feinstein and Bynner 2004). Delinquency during this period is of particular concern: while most antisocial youth do not become antisocial adults (Robins 1978), those engaging in delinquent activities at earlier ages are at greatest risk of accumulated disadvantage across the life course, resulting both from the deviant behavior itself, and from the reactions of parents, teachers, and other authority figures to this behavior (Moffitt 1993).

While children's delinquency has been tied to a wide variety of factors, ranging from personality, impulsivity, and intelligence to socioeconomic and community influences, family circumstances are consistently identified in both the research literature and the popular media as one of the leading predictors of delinquent behaviors (Farrington 2007). Several longitudinal studies have demonstrated significant relationships between family socioeconomic disadvantage, parenting behavior, parental criminality, and children's delinquency, and eventual offending as adults (Thornberry and Krohn 2002).

The unprecedented rise in incarceration over the second half of the 20th century has had devastating consequences for family stability, undermining couple relationships, limiting the financial resources available to caregivers and children, and, often, placing children in stressful or otherwise damaging circumstances (Comfort 2008; Western and Wildeman 2009). Children at all stages have been shown to display increased behavior problems following their parents' incarceration, and several careful analyses suggest that these problems represent a causal effect of the parental incarceration experience (Geller et al. 2012; Wakefield 2009; Wildeman 2010). However, much remains to be known about the role of paternal incarceration and its influence on children's delinquency and offending (Murray et al. 2009). Incarcerated parents are a select group, and the antisocial behavior that resulted in their incarceration may be a larger influence on their children's delinquency than the incarceration experience itself.

This analysis uses new data from the Fragile Families and Child Wellbeing Study to examine children's delinquent behavior in middle childhood, and assess the role of family influences, and paternal incarceration in particular, in predicting child delinquency. Using longitudinal measures of children's behavior problems and a rich set of family predictors, I identify significant differences in the behavior of children whose fathers have been incarcerated, and identify directions for future research to assess the extent to which these differences represent causal effects.

Literature Review

Family Disruption and Antisocial Behavior

Although attachment theory (Bowlby 1973) was initially introduced to discuss the connections between mothers and infants, decades of research have identified strong links between family disruption and children's delinquency. Farrington (2007) lays out three major classes of theories relating the two:

Trauma theories suggest that the loss of a parent has a damaging effect on a child, most commonly because of the effect on attachment to the parent. Life-course theories focus on separation as a sequence of stressful experiences, and on the effects of multiple stressors such as parental conflict, parental loss, reduced economic circumstances, changes in parent figures, and poor child-rearing methods. Selection theories argue that disrupted families produce delinquent children because of preexisting differences from other families in risk factors such as parental conflict, criminal or anti-social parents, low family income, or poor child-rearing methods.

These three theories are not mutually exclusive, and separation caused by a parent's incarceration is likely to have elements of each. Children's contact with incarcerated parents is generally sporadic. Parents in prison are incapacitated from participating fully in their children's lives, and most children are limited to irregular visits and phonecalls (Poehlmann 2010). Even for fathers who had previously been nonresident, incarceration represents a potentially serious disruption in family routines. Most unmarried and nonresident fathers maintain contact with their children, (Argys et al. 2006; Tach, Mincy and Edin 2010), with many are involved with their children's daily activities (Waller and

Swisher 2006). Incarceration limits both the quantity and quality of this involvement (Swisher and Waller 2008).

Paternal incarceration also represents a potential turning point in a child's family life, and in turn, his or her development. The incapacitation of a father from the labor market, and the challenges ex-prisoners face upon re-entry, often lead to decreases in household resources (Geller, Garfinkel and Western 2011; Swisher and Waller 2008) and increases in material hardship (Schwartz-Soicher, Geller and Garfinkel 2009). These stresses and others associated with the incarceration may strain parents' relationships (Anderson 1994; Edin 2000; Hairston 1998) leading to conflict, separation (Western 2006) or a mother's re-partnering (Braman 2004). The stresses and complexity faced by mothers and other caregivers may also limit their capacity for positive parenting, reduce the extent to which children are supervised, and leave children greater opportunities for antisocial behavior (Dallaire and Aaron 2010).

In addition to the aforementioned causal explanations, the link between paternal incarceration and children's delinquency may be based on family risk factors that predated the father's involvement in the criminal justice system. Incarcerated fathers, and incarcerated men more generally, tend to be highly disadvantaged before their time in prison or jail, with low levels of education, and high rates of drug use, mental health problems, and impulsivity (Petersilia 2003; Western 2006). To the extent that incarcerated fathers were in high-conflict parental relationships, or brought his antisocial activities into the household, then his incapacitation might improve child well-being rather than promoting delinquency (Whitaker, Orzol and Kahn 2006).

Whatever the role of paternal incarceration in children's development and behavior, delinquency is shaped not only by family circumstances, but also by a number of individual and environmental characteristics, and, moreover, by the interaction between individuals and their family and community environments (Farrington 2007). Lipsey and Derzon (1998) identify several strong predictors of offending behavior, namely low intelligence and attainment, personality and temperament, empathy, and impulsivity (see, also, Farrington 2007). Children are also heavily influenced on a number of contextual levels: by the actions of their peers, the support and supervision provided at their schools, resources available in their neighborhoods, and the reactions of

peers, teachers, and community members to both their individual actions and their families' circumstances. A father's incarceration could lead to changes in how his children are perceived by others, in turn affecting later behavior; however, children's interactions at school and in their community may also affect delinquency in ways unrelated to fathers' incarceration.

Empirical Evidence

That behavioral problems are higher among children of incarcerated fathers is well established (See Murray et al. 2009 for a review). Beginning as early as age 3, children of incarcerated or formerly-incarcerated fathers display more externalizing behavior than children whose fathers have no history of incarceration (Geller et al. 2009), a relationship that continues into school age (Wildeman 2010; Geller et al. 2012) and middle childhood (Murray and Farrington 2005; Wakefield 2009; Wilbur et al. 2007). While these increased levels of problem behavior might be driven by other unobserved disadvantages among children of incarcerated fathers, the use of longitudinal data and repeated measures of child behavior suggest that changes in behavior follow incidents of paternal incarceration, cannot be explained by a number of selection hypotheses, and are likely to represent a causal relationship (Geller et al. 2012; Wildeman 2010; Wakefield 2009).

As children enter adolescence and adulthood, there is also substantial evidence of a relationship between fathers' incarceration during childhood and children's (predominantly sons') involvement with the criminal justice system. Findings from the Cambridge Study in Delinquent Development (Murray and Farrington 2005) suggest that sons whose fathers were incarcerated during their childhood are significantly more likely than others to display antisocial behavior in adulthood, or to themselves be convicted of a crime or incarcerated. While the relationship between fathers' incarceration and sons' criminal justice system involvement is driven predominantly by other observable risk factors, the relationship between incarceration and antisocial behavior in adulthood is robust to the consideration of these factors.

Despite this growing literature, much remains to be learned about the effects of paternal incarceration on child behavior. The bulk of research on the intergenerational transmission of criminality focuses on adolescent and adult children of formerly

incarcerated parents (Murray and Farrington 2008). What is known about younger children, through middle childhood, tends to be based on caregiver and teacher reports of child behavior, rather than direct reports from the children themselves (Wakefield 2009; Wilbur et al. 2007). While the assessments of children by adults are of critical importance in schooling, and are predictive of later outcomes (Entwisle and Hayduk 1988), adults are likely to be unaware of the extent of children's antisocial behavior, and their reports may be inaccurate indicators of either delinquency or children's risk of later offending. Official criminal records also capture only a limited range of antisocial activities, those that are detected by law enforcement agencies (Kirk 2006). Particularly for children, whose contact with law enforcement is likely to be limited before entering their peak offending years, additional measures of behavior are required.

In this analysis I examine self-report data on a number of behavioral outcomes, from a birth cohort of urban children, to assess the risk of delinquency associated with paternal incarceration. While the current analysis does not assess the causal nature of identified relationships, the extent to which paternal incarceration is a marker for children's delinquency will suggest directions for parents, other caregivers, and teachers to disrupt the intergenerational transmission of antisocial behavior.

Data

The analysis is based on data from the Fragile Families and Child Wellbeing study, which follows a cohort of nearly 5,000 couples with children born between 1998 and 2000 in twenty large U.S. cities (Reichman et al. 2001). Fragile Families systematically oversamples unmarried parents, but when weighted or regression-adjusted is nationally representative of urban families with children. Both mothers and fathers are surveyed at the time of their child's birth, with follow-up surveys conducted when the children are one, three, five, and nine years old. The current analysis is based on a nearly-complete draw of the nine-year data, in which both parents and their children are interviewed. The analysis sample consists of the 3,169 families in which the child is permitted to be interviewed, and completes the full battery of 17 delinquency questions¹.

¹ Of the 3,231 children completing at least one delinquency question, 98% complete all 17.

Measures

Delinquency. Children are asked to self-report their history of participating in each of seventeen delinquent acts from the “Things that You Have Done” scale, used in the Fast Track project (Maumary-Gremaud 2000), and modeled after the National Youth Survey (Elliott, Huizinga, and Menard 1989). A full list of included activities, and their relative frequency is provided in Figure 1, and includes indicators of school delinquency, vandalism, theft, offenses against people, and use of both alcohol and drugs. Children respond to each question with a yes or no, and the total number of “yes” answers may be summed to construct a variety score (Thornberry and Krohn 2000) that measures the scope of delinquent activity.

Incarceration. Fathers’ incarceration is measured using a series of survey questions asked of both the fathers themselves, and their romantic (or formerly romantic) partners. Maternal reports of fathers’ incarceration history are a particularly valuable supplement to the self-reports when fathers are either unavailable for interview, or are incarcerated upon arrest only, or in other instances where he was not convicted of a crime². While incarceration and other antisocial activity are often underreported (Golub et al. 2002), and mothers may not be fully aware of their partners’ incarceration history (Caspi et al. 2001), parents’ reports of incarceration agree in most cases where they are both interviewed, and very few fathers self-report incarceration without their partner also reporting his incarceration (Geller et al. 2012). To guard against measurement error due to either attrition or underreporting, I identify fathers as having been incarcerated if either parent reports his incarceration. These reports are further supplemented with “indirect reports”, in which either parent indicates that the fathers’ incarceration was the reason for a recent breakup, a parent-child separation, or played another role in family life. In the baseline through year five surveys, these reports are further supplemented with “disposition” cases where the survey contractors report being unable to reach a respondent because the respondent is incarcerated (Geller et al. 2012). Disposition data for the nine-year survey will be available in a later round of data delivery. In each wave

² Fathers and their partners are each asked different questions about his incarceration history. Fathers are asked to self-report any criminal charges, convictions, and, if they report conviction, any incarceration. Mothers are asked only if their partner has been incarcerated, and thus may report incarceration incidents that were not related to a criminal conviction.

of the Fragile Families survey, I measure whether the father is reported as incarcerated in the previous wave, and combine these reports to indicate whether the father has been incarcerated at any time before the survey.

Table 1 presents each of the indicators of juvenile delinquency and their relative prevalence by fathers' incarceration history. The first two columns present the prevalence of each delinquency item for children whose fathers have ever and never been incarcerated, and the second two columns further divide the sample of children with paternal incarceration history into two groups: those experiencing a recent paternal incarceration (i.e., between the fifth and ninth-year surveys), and those experiencing only a distal incarceration (i.e., any time before the fifth-year survey, but not since). The final column presents delinquency data for children whose fathers' incarceration histories are unknown, and the bottom rows present children's average variety score by paternal incarceration status.

As shown, children whose fathers have been incarcerated display significantly greater levels of delinquency than their counterparts whose fathers have never been incarcerated. They report participation in a significantly greater variety of delinquent activities, and each individual activity is more prevalent among children of incarcerated fathers, though only a portion of these differences (just over half) are statistically significant. Within the population of children with incarcerated fathers, those experiencing a paternal incarceration within the last four years participate in a greater variety of delinquent activities than those whose fathers' incarceration experiences were further in the past.

Behavioral Trajectory Indicators. Children's personality and behavior unfold over time, and children's delinquency in middle childhood is a single observation in a longer behavioral trajectory (White et al. 1990). To better understand this development, I examine age nine delinquency in the context of children's earlier behavioral problems, measured with the Child Behavioral Checklist (Achenbach and Rescorla 2000): caregivers' assessment of children's aggression at age three, and of externalizing behavior (including both aggression and rule-breaking behavior) at age five. I also examine the extent to which caregivers' reports of children's externalizing behavior at age nine correspond to their own reported delinquency.

Potential Confounders. Children’s delinquency, and the behavioral differences observed in Table 1, must also be interpreted in the context of several individual, family, peer, and community factors. While the Fragile Families Study examines a rich set of demographic and socioeconomic factors that are likely associated with both fathers’ incarceration and children’s delinquency, in this preliminary analysis I consider only a limited subset of available covariates that are of particular salience. First, since behavioral differences between boys and girls are well-established (McHale et al. 2009), I examine differences in delinquency patterns by child gender. I also focus on a number of family characteristics likely to be correlated with both paternal incarceration and child delinquency: mother’s race/ethnicity, the parental relationship (i.e., whether parents were married, cohabiting, or living apart) at the time of the focal birth, whether the mother was in poverty at the time of the birth, each parent’s educational attainment at baseline, and an indicator of whether either parent’s mother (ie, either of the focal child’s grandmothers) had a history of mental health problems.

Analysis strategy

Identifying Delinquency Patterns.

To identify children’s tendency toward delinquency, I estimate a multilevel Rasch model for item response (Rabe-Hesketh, Skrondal and Pickles 2004; Raudenbush, Johnson and Sampson 2003). Specifically, for each delinquency item i ($i=1..17$), the log odds of child j reporting the behavior is equal to

$$v_{ij} = \beta_i + \eta_j \quad (1)$$

where $-\beta_i$ is assumed to represent the relative severity of delinquent act i^3 , and η_j , estimated as a child-specific random effect, represents child j ’s overall tendency toward delinquency. I begin by examining the relationship between children’s self-reported delinquency and their caregivers’ reports of problem behavior. I first compute the correlation between children’s externalizing scores on the nine-year CBCL and their

³Higher values of β_i represent delinquent acts committed by more children, and lower values of β_i represent less common acts. Assuming “unidimensionality”, or that each delinquency item taps a single underlying dimension of criminality, and “additivity”, the less common delinquent behaviors represent activities that are more antisocial in nature (Raudenbush et al. 2003).

estimated η_j . High correlations between the two suggest that caregiver reports accurately identify children participating in delinquent activities.

To reflect the developmental trajectory that leads up to and shapes behavior in middle childhood, I next stratify the sample by a principal components factor combining children's three-year aggression and five-year externalizing scores ($\alpha=0.68$), and explaining 76% of their combined variance. As with the nine-year externalizing scores, I compare the values of η_j for children with histories of low, medium, and high levels of behavioral problems, and identify differences in question severity β_i , based on the relative prevalence of each behavior by population subsample.

Child Delinquency and Paternal Incarceration.

To estimate differences children's tendency by paternal incarceration status, I stratify the analysis sample by fathers' incarceration status (recent incarceration, distal incarceration only, and no incarceration), and re-estimate Model 1 for each group, to identify differences in delinquency patterns and relative item severity. I also estimate differences in children's tendency toward delinquency, based on the values of their individual-level delinquency parameters η_j in the full-sample model, and test for significance in the comparisons between children with and without paternal incarcerations, and between children with recent paternal incarceration and with distal incarceration only.

Finally, to assess the extent to which differences in children's delinquency can be attributed to observable factors other than incarceration, I estimate a series of models predicting children's reported variety scores, measuring the number of different activities they report having participated in. First, I estimate unadjusted differences between children with and without any paternal incarceration, and between children experiencing recent and distal paternal incarceration.

$$VS_i = \beta_0 + \beta_1 AnyInc_i + \varepsilon_i \quad (2)$$

$$VS_i = \beta_0 + \beta_1 RecentInc_i + \varepsilon_i \quad (3)$$

I next estimate delinquency differences associated with both fathers' lifetime incarceration and fathers' recent incarceration, adjusted for child and family characteristics \mathbf{X} (child gender, mothers' race, baseline parental relationship, baseline parental education, and family mental health history).

$$VS_i = \beta_0 + \beta_1 AnyInc_i + \beta \mathbf{X}_i + \varepsilon_i \quad (4)$$

$$VS_i = \beta_0 + \beta_1 \text{RecentInc}_i + \beta \mathbf{X}_i + \varepsilon_i \quad (5)$$

Finally, I estimate the extent to which children's behavior changes following a new paternal incarceration by predicting children's variety scores as a function not only of recent and distal paternal incarceration and associated covariates, but mothers' reports of children's behavior problems at ages 3 and 5.

$$VS_i = \beta_0 + \beta_1 \text{RecentInc}_i + \beta_2 \text{DistalInc}_i + \beta_3 \text{Agg3}_i + \beta_4 \text{Ext5}_i + \beta \mathbf{X}_i + \varepsilon_i \quad (6)$$

In Model 6, the coefficient β_1 identifies differences in child delinquency between children with similar behavioral trajectories and paternal incarceration history until age 5, by paternal incarceration status between years 5 and 9. While these differences cannot be assumed to represent causal effects of incarceration, significant differences in delinquency associated with new paternal incarceration suggest instability in family circumstances, either leading to or stemming from the child's antisocial behavior.

Results

Delinquency Patterns.

As suggested by Figure 1 and Table 1, delinquent activities are prevalent among the children in the Fragile Families sample. Just over half (53%) of children in the analysis sample report having taken part in at least one delinquent activity. While most children reporting delinquency report participating in relatively few distinct antisocial acts (more than 80% of children reporting delinquency report three or fewer types of delinquent acts), each of the scale items was reported by at least one child in the sample.

Table 1 also suggests significantly more delinquency among children with incarcerated, or formerly incarcerated fathers. They report committing a greater variety of delinquent acts, and are significantly more likely to have participated in 10 of the 17 types of delinquency in the scale. Children whose fathers were recently incarcerated also report a greater variety of delinquent acts than those not incarcerated since their five-year interviews, and report a higher prevalence of four of the scale items.

Examining the delinquency items themselves, Figure 2 presents the Rasch coefficients β_i from a Random Effects model predicting reported participation in each activity i . These coefficients represent, after controlling for children's baseline tendencies to report delinquent activity, how rare or prevalent each individual activity is.

Under the Rasch model's assumptions and controlling for baseline delinquency, activities that are more commonly reported and have lower β coefficients represent more normative behaviors, while activities that are less common and have higher β coefficients represent more antisocial behaviors. Figure 2, like Figure 1, suggests substantial differences in the relative prevalence of individual behaviors – getting into fights, reported by nearly one third of children in the sample, is estimated to be the least severe of the 17 delinquent activities ($\beta=1.09$), while having smoked marijuana, reported by only six of the 3,015 respondents, has a severity coefficient nearly seven times as high ($\beta=7.47$).

Given the estimated severity of the items indicated in the tables and figures below, children's tendency toward delinquent activities is estimated with η_j , the random effects parameters in Model 1. Holding other factors constant, children with higher values of η_j commit more, and more severe delinquent acts. Figure 3 presents a histogram of the η_j values. The rightward skew of the distribution suggests that most children in the sample display relatively low levels of delinquency, a small portion of the sample reports the vast majority of delinquent behavior. Values of η_j are positively correlated with caregiver assessments of problem behavior; however, the correlation coefficients are small in magnitude (correlations between η_j and caregiver reports of aggression, rule-breaking, and externalizing behavior more generally are .29, .26, and .30, respectively), suggesting that the behaviors identified as problematic by caregivers reflect factors including, but not limited to delinquency.

Delinquent Behavior and Paternal Incarceration.

Table 2 presents item severity coefficients from Model 1, as well as three replications of Model 1, with the analysis sample stratified by fathers' incarceration status. For each delinquency item, the item severity parameter is greatest for the subsample with no paternal incarceration and smallest for the subsample with recent paternal incarceration, with the "distal incarceration only" group falling in between. Further, returning to the full-sample estimation, the average value of the children's η_j parameters is greatest for those children experiencing a recent paternal incarceration, and lowest for those children whose fathers were never incarcerated (both differences significant at $P<.001$). However,

the rank ordering of the delinquency items is largely consistent across the groups, with only small differences in item position across groups.

While delinquent behavior is more prevalent among children with a history of paternal incarceration, differences in delinquency are diminished substantially when other forms of family disadvantage are controlled for. Table 3 presents regression results that begin with unadjusted differences by paternal incarceration history (columns 1 and 2), and progressively add both demographic and socioeconomic covariates (columns 3 and 4) and past measures of children's behavior problems (column 5). As covariates are added to the model, the difference in variety score associated with either fathers' lifetime or recent incarceration is diminished substantially. However, other factors emerge as significant predictors of children's delinquency: boys report substantially more individual delinquency items than do girls, and black children⁴ report significantly more delinquency items than do white children, while Hispanic children report significantly fewer. Parental education also emerges as a significant predictor of delinquency in the third and fourth columns of table 3 (models 4 and 5 above), with children of highly educated fathers reporting fewer delinquent acts, and children of poorly educated mothers reporting more. Finally, in each of these models, children with a family history of mental health problems report significantly more delinquent activities than their counterparts with no such family history. Beyond these factors, however, paternal incarceration remains a strong and significant predictor of children's self-reported delinquency.

However, this relationship changes when examining children's reported delinquency in the context of their prior behavioral trajectories and their fathers' incarceration trajectories. When fathers' incarceration history is divided into recent and distal incarceration, and children's prior behavior is controlled for, recent paternal incarceration is only marginally associated with children's delinquency ($P=.053$). However, distal incarceration is significantly associated with delinquency, as are both reports of early child behavior. This model does not suggest that paternal incarceration and child delinquency are unrelated; distal incarceration remains a significant predictor of the children's variety scores, and many of the fathers reporting distal incarceration also

⁴ Children's race, in this model, is estimated by their mother's race.

report recent incarceration (more than 40%)⁵. However, these findings suggest that the timing of fathers' incarceration and children's developmental trajectories must be considered carefully when assessing the extent to which observed relationships are causal.

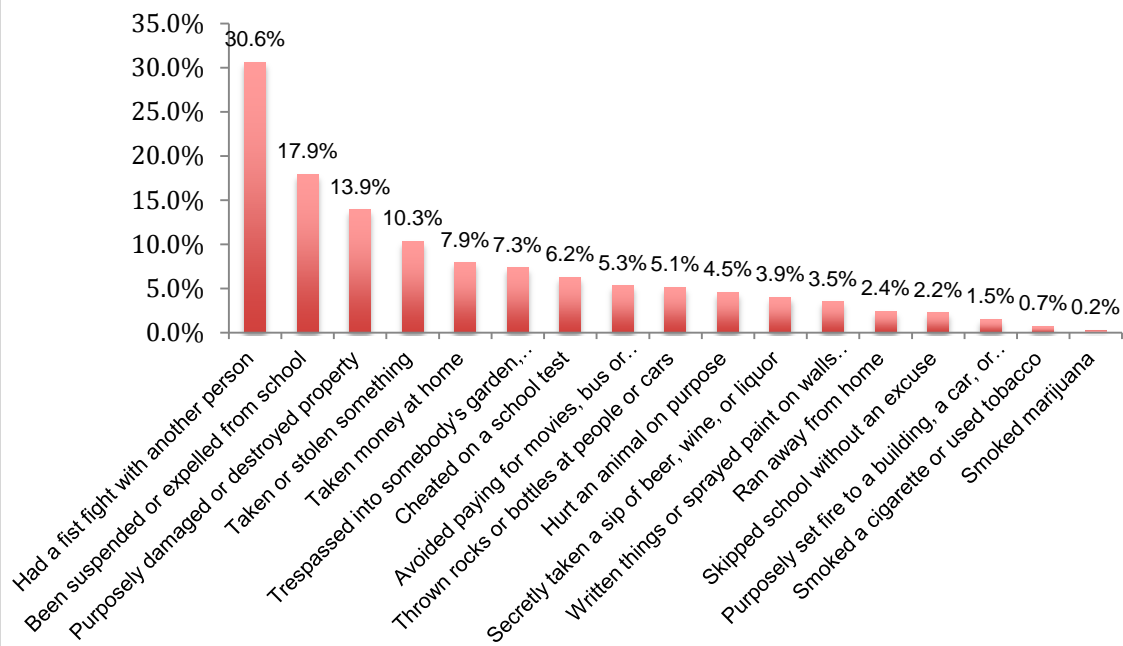
Conclusions and Next Steps

While the models estimated to date are only preliminary, they suggest that the children of men with incarceration histories are themselves at great risk of offending behavior. They participate in a wider range of delinquent activity than children whose fathers were never incarcerated, and models controlling for the severity of delinquent activity indicate a robust relationship in which children of incarcerated fathers, and recently-incarcerated more than distally-incarcerated, report greater levels of delinquency. This relationship is consistent with literature discussing caregiver reports of child behavior, and with literature discussing offending, convictions, and incarceration in adulthood. However, it is important to stress that these models are only preliminary and fail to consider a wide range of individual, family, school, and community factors associated with delinquency and offending behavior. While the observed relationships provide a basis for further analysis, they are in no way intended to indicate a causal effect of incarceration.

Future work in this area must not only consider the many individual, family and community factors that the literature suggests will influence children's offending behavior, but also fully leverage the longitudinal structure of the Fragile Families data. While caregiver reports of child behavior problems appear to be imperfect predictors of children's self-reported delinquency, they are correlated, and early indicators of behavior problems may be predictive of delinquency in middle childhood. Understanding the intergenerational transmission of antisocial behavior and criminal justice involvement requires an understanding of the behavioral trajectories of fathers and children alike.

⁵ Moreover, a model (not shown) controlling for recent incarceration without controlling for distal incarceration suggests a significant association between recent incarceration and children's delinquency.

**Figure 1: Participation in Delinquent Activities
Fragile Families Nine-Year Respondents (N=3,015)**



Activity	Percent Reporting	Percent Reporting: Father Ever Incarcerated	Percent Reporting: Father Never Incarcerated	Significance of Difference	Recent Incarceration	Distal Incarceration Only	Significance of Difference	Incarceration Unknown
Had a fist fight with another person	30.6%	36.4%	24.9%	***	39.3%	33.8%	*	26.2%
Been suspended or expelled from school	17.9%	24.1%	11.6%	***	27.4%	21.3%	**	15.0%
Purposely damaged or destroyed property	13.9%	16.5%	11.0%	***	18.3%	15.0%	NS	15.9%
Taken or stolen something	10.3%	11.4%	9.1%	*	14.0%	9.2%	**	10.3%
Taken money at home	7.9%	9.5%	6.3%	**	9.9%	9.2%	NS	6.5%
Trespassed into somebody's garden, backyard, house, or garage	7.3%	7.9%	6.6%	NS	8.6%	7.3%	NS	8.4%
Cheated on a school test	6.2%	7.5%	5.1%	**	7.9%	7.2%	NS	2.8%
Avoided paying for movies, bus or subway rides, or food	5.3%	6.7%	3.9%	**	7.1%	6.3%	NS	3.7%
Thrown rocks or bottles at people or cars	5.1%	5.7%	4.4%	NS	5.8%	5.7%	NS	6.5%
Hurt an animal on purpose	4.5%	4.6%	4.4%	NS	4.8%	4.4%	NS	5.6%
Secretly taken a sip of beer, wine, or liquor	3.9%	4.1%	3.6%	NS	4.9%	3.4%	NS	6.5%
Written things or sprayed paint on walls or sidewalks or cars	3.5%	4.4%	2.7%	*	4.5%	4.3%	NS	1.9%
Ran away from home	2.4%	3.0%	1.8%	*	3.7%	2.3%	NS	3.7%
Skipped school without an excuse	2.2%	2.7%	1.7%	NS	3.6%	1.9%	*	2.8%
Purposely set fire to a building, a car, or other property or tried to do so	1.5%	2.0%	1.0%	*	2.7%	1.4%	NS	0.0%
Smoked a cigarette or used tobacco	0.7%	0.8%	0.6%	NS	0.9%	0.8%	NS	0.0%
Smoked marijuana	0.2%	0.2%	0.1%	NS	0.3%	0.1%	NS	1.9%
Variety Score Average:	1.23	1.48	0.99	***	1.64	1.33	**	1.18
[SD]	[1.77]	[0.05]	[0.04]		[0.08]	[0.06]		[1.70]

The 107 children within paternal incarceration status unknown include 106 whose fathers are reported as "not incarcerated" in the Y5-Y9 wave, but their record of more distal incarceration is unknown

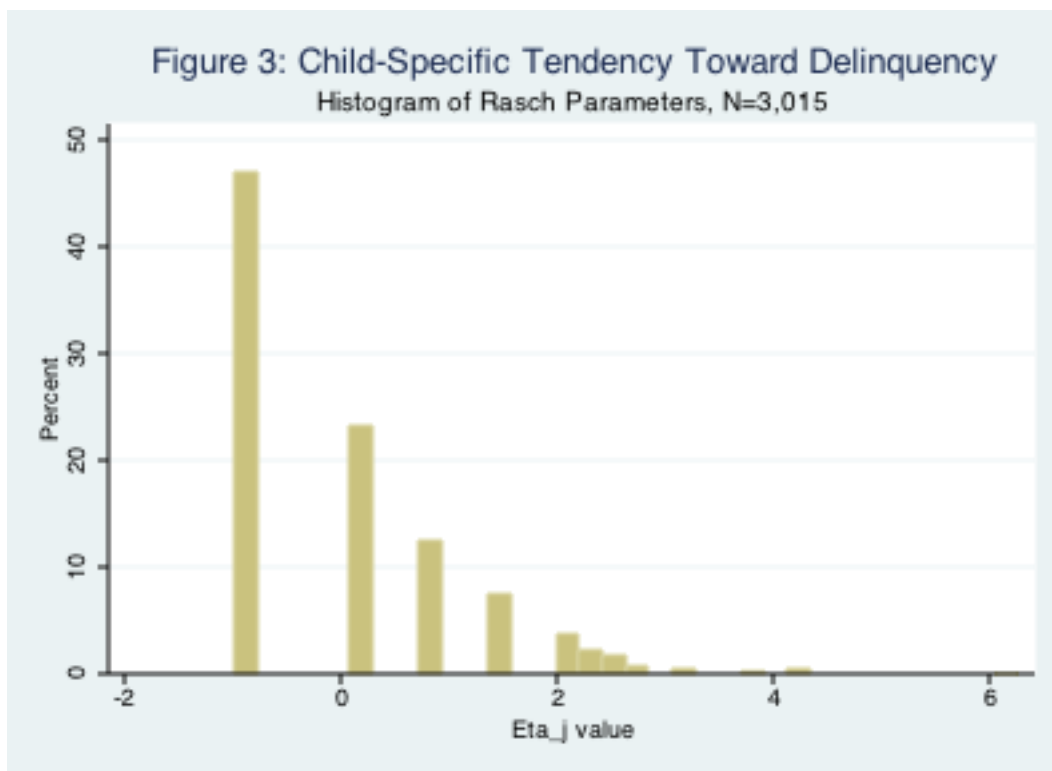
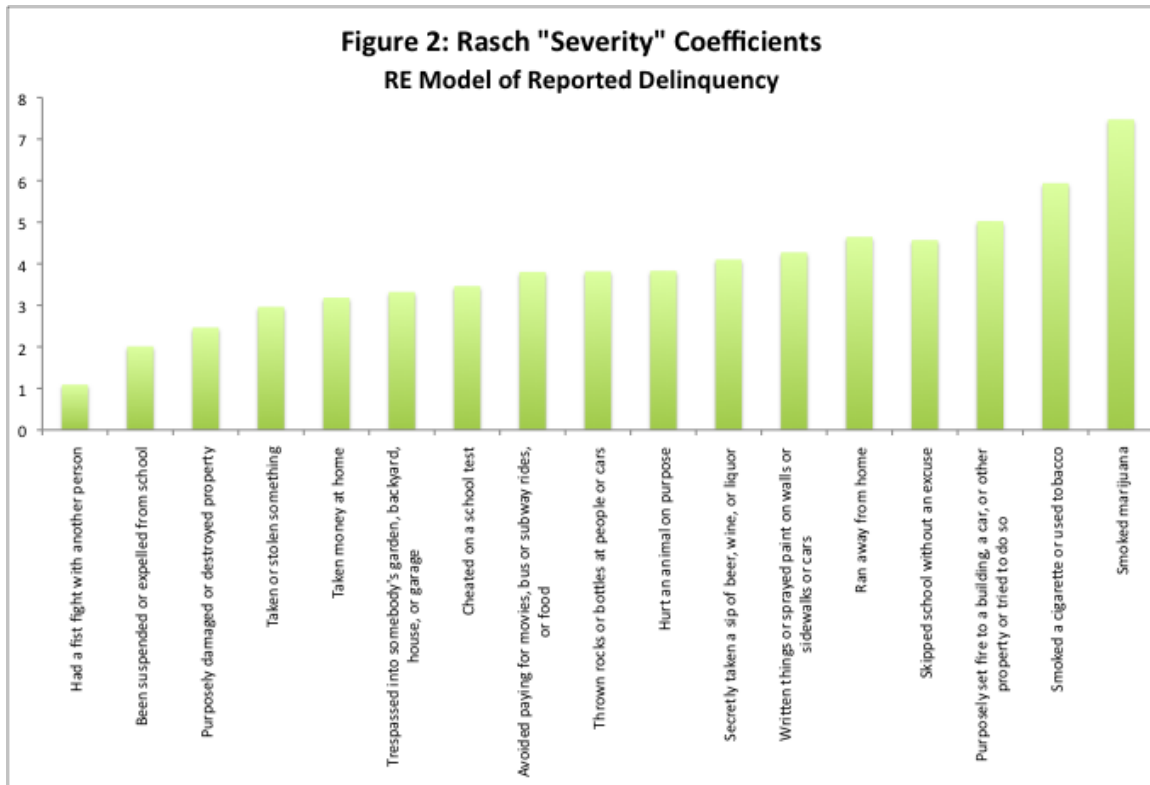


Table 2: Rasch Item Severity Coefficients by Paternal Incarceration Status

	Full Model Coefficients	Recent Incarceration	Distal Only	No Incarceration
Purposely damaged or destroyed property	2.47	2.03	2.38	2.83
Taken or stolen something	2.96	2.44	3.07	3.09
Taken money at home	3.18	2.92	3.07	3.57
Cheated on a school test	3.46	3.22	3.40	3.82
Had a fist fight with another person	1.09	0.61	0.95	1.54
Hurt an animal on purpose	3.83	3.86	4.00	4.02
Trespassed into somebody's garden, backyard, house, or garage	3.32	3.11	3.38	3.50
Ran away from home	4.65	4.14	4.77	5.07
Skipped school without an excuse	4.57	4.18	4.97	5.11
Secretly taken a sip of beer, wine, or liquor	4.10	3.82	4.31	4.25
Smoked marijuana	7.47	6.88	7.78	8.47
Smoked a cigarette or used tobacco	5.94	5.75	5.95	6.19
Been suspended or expelled from school	2.01	1.35	1.82	2.75
Written things or sprayed paint on walls or sidewalks or cars	4.28	3.93	4.04	4.59
Purposely set fire to a building, a car, or other property or tried to do so	5.03	4.50	5.31	5.71
Avoided paying for movies, bus or subway rides, or food	3.80	3.37	3.57	4.14
Thrown rocks or bottles at people or cars	3.82	3.62	3.70	4.02
Summary Statistics from "Full Sample Model"				
Average Delinquency Parameter η_j	-0.01	0.27	0.07	-0.18
Standard Deviation	[1.14]	[1.22]	[1.17]	[1.06]
t-tests suggest that differences between groups are statistically significant at $P < .001$				

Table 3: Regression Estimates Predicting Children's Delinquency Variety Score									
	b/se		b/se		b/se		b/se		b/se
Ever incarcerated	0.489 ***				0.283 ***				
	[0.065]				[0.071]				
Recently Incarcerated (Y5-Y9)			0.522 ***				0.308 ***		0.167
			[0.083]				[0.085]		[0.086]
Distal Incarceration (pre-Y5)									0.147 *
									[0.075]
Year 5 Externalizing									0.243 ***
									[0.049]
Year 3 Aggression									0.213 ***
									[0.054]
Child is male					0.717 ***		0.71 ***		0.664 ***
					[0.061]		[0.061]		[0.059]
Mother is black					0.453 ***		0.456 ***		0.466 ***
					[0.088]		[0.088]		[0.086]
Mother is Hispanic					-0.276 **		-0.284 **		-0.247 **
					[0.093]		[0.092]		[0.093]
Mother is Other nonwhite					-0.061		-0.074		-0.113
					[0.134]		[0.134]		[0.137]
Baseline Cohabiting					-0.121		-0.085		-0.14
					[0.091]		[0.089]		[0.089]
Baseline Nonresident					0.063		0.094		0.003
					[0.100]		[0.098]		[0.098]
Father < HS					-0.03		-0.021		-0.06
					[0.074]		[0.074]		[0.074]
Father Graduated College					-0.207 *		-0.232 *		-0.17
					[0.095]		[0.094]		[0.093]
Mother < HS					0.188 *		0.194 **		0.154 *
					[0.074]		[0.074]		[0.073]
Mother Graduated College					-0.194		-0.209 *		-0.153
					[0.101]		[0.101]		[0.097]
Mental Health History					0.193 **		0.196 **		0.098
					[0.070]		[0.071]		[0.070]
N	3015		3015		3015		3015		3015
* p<0.05, ** p<0.01, *** p<0.001									
Missing data indicators in models, but not shown.									
Models are OLS with robust standard errors									

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